Symantec NetRecon™ 3.6 Getting Started Guide

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Revision February 21, 2001

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Chapter 1

Introducing Symantec NetRecon

This chapter includes the following topics:

- Identifying vulnerabilities
- Understanding the Program window
- Performing scans
- Using path analysis
- Generating reports
- Generating objective and vulnerability descriptions
- Running progressive scanning

Identifying vulnerabilities

Symantec NetRecon is a network vulnerability detection system. It lets a security administrator scan networks to discover their security vulnerabilities. Symantec NetRecon combines ordinary testing and information gathering tools that are available in most networks with specialized system-cracking tools. Symantec NetRecon helps administrators identify which parts of a network are most susceptible to unauthorized access and denial of service.

Because Symantec NetRecon probes systems in various manners, it demonstrates the many ways that networks are vulnerable. Because the process is automated, a large amount of information can be gathered in a short amount of time.

Symantec NetRecon reports provide detailed information regarding potential problems such as weak passwords, system services that are vulnerable to denial of

service attacks, and so on. This allows administrators to fix particular problems and see vulnerability patterns.

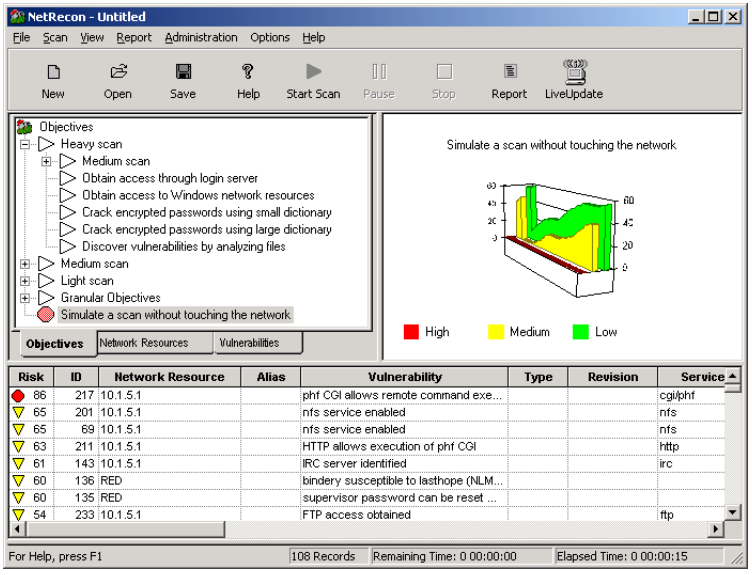
While Symantec NetRecon tests for the possibility of denial of service attacks, it does not actually perform such attacks.

Symantec NetRecon discovers vulnerabilities—it does not fix them. Using Symantec NetRecon is just one part of the network security process. It should be used to help formulate strong security policies and put them into practice.

Understanding the Program window

The Symantec NetRecon program window is divided into several areas that are called panes. Figure 1-1 highlights sections of the Symantec NetRecon window.

Figure 1-1 The Symantec NetRecon Program window


NetRecon - Untitled
File Scan View Report Administration Options Help
New Open Save Help Start Scan Pause Stop Report LiveUpdate
Objectives
Heavy scan
Medium scan
Obtain access through login server
Obtain access to Windows network resources
Crack encrypted passwords using small dictionary
Crack encrypted passwords using large dictionary
Discover vulnerabilities by analyzing files
Medium scan
Light scan
Granular Objectives
Simulate a scan without touching the network
Objectives
Network Resources
Vulnerabilities
Simulate a scan without touching the network
High
Medium
Low
Risk ID Network Resource Alias Vulnerability Type Revision Service
86 217 10.1.5.1 phf CGI allows remote command exe... cgi/phf
65 201 10.1.5.1 nfs service enabled nfs
65 69 10.1.5.1 nfs service enabled nfs
63 211 10.1.5.1 HTTP allows execution of phf CGI http
61 143 10.1.5.1 IRC server identified irc
60 136 RED bindery susceptible to lasthope (NLM...
60 135 RED supervisor password can be reset ...
54 233 10.1.5.1 FTP access obtained ftp
For Help, press F1
108 Records
Remaining Time: 0 00:00:00
Elapsed Time: 0 00:00:15

Control pane

The Objectives tab in the Control pane, in the upper left corner of the Symantec NetRecon main window, lets you select which Symantec NetRecon objectives to run. The Network Resources tab displays scan results that are related to particular network resources, and the Vulnerabilities tab displays scan results that are related to vulnerabilities during or after a scan. The contents of the Graph and

Data Table panes are controlled by the objective, network resource, or vulnerability that is selected in the Control pane.

Objectives tab

Use the Objectives tab to select Symantec NetRecon objectives to run. To discover network vulnerabilities, Symantec NetRecon has the following preset goals, some for gathering information about networks and vulnerabilities in network resources and some that use that information to gain access to network resources. These goals are referred to in Symantec NetRecon as objectives.

Symantec NetRecon objectives are organized into a hierarchy, as represented by the tree structure. To expand any part of the tree, click the plus symbol to the left of any parent objective.

Selecting an objective in the Objectives pane limits the records that are displayed in the Data Table pane and the Graph pane to those that meet the selected objective.

Objectives for live scans are divided into the following four categories:

- Heavy scan
- Medium scan
- Light scan
- Granular objectives

Light scan

A Light scan is primarily for identifying network resources (including finding names and aliases and determining which operating system is running on that network resource) and searching for the most common services or ports that are known to have vulnerabilities, such as SMTP, FTP, and so on.

Medium scan

A Medium scan includes everything that is performed by a light scan and also tries to find a much wider range of vulnerabilities by checking for services on more ports and using more protocols. A medium scan also does a more in-depth analysis of common services, such as SMTP, to try to find vulnerabilities.

Heavy scan

A Heavy scan includes everything that is performed by a light and medium scan and also attempts to use any information that is gathered to actually gain access to network resources by logging into login servers, accessing shared Windows resources, and so on. A heavy scan also attempts to crack any encrypted

passwords that Symantec NetRecon has discovered and to analyze files that Symantec NetRecon has retrieved.

Granular objectives

Granular objectives give users the ability to run certain commonly-used objectives individually, rather than as part of a full scan. This provides users with the versatility to select specific objectives from a predefined list. Because Symantec NetRecon runs only the necessary scans to obtain information about selected objectives, rather than running a full scan, users quickly have the needed information.

All objectives that were previously contained in the miscellaneous category, as well as certain objectives from the light, medium, and heavy scans, are part of the list of granular objectives. Those objectives from the light, medium, and heavy scans are still part of the full scans and they run when a full scan is selected. Granular objectives have parent and child objectives. Select a parent objective to run each of the child objectives, or select a child objective to run it individually. In the list of granular objectives, indented items are child objectives.

- Discover NFS vulnerabilities
- Use Windows networking
  - Use Windows networking to discover vulnerabilities
  - Obtain access to Windows network resources
- Discover vulnerabilities of NetWare network resources
- Discover RPC services
- Obtain maps from NFS servers
- Discover SMB server vulnerabilities
- Discover SMTP vulnerabilities
- Discover FTP vulnerabilities
- Discover IRC vulnerabilities
- Discover HTTP vulnerabilities
- Discover finger vulnerabilities
- Discover BIND vulnerabilities
- Discover Oracle database vulnerabilities

- Trojans
  - Discover trojans and vulnerable services running on UDP ports
  - Discover trojans and vulnerable services running on TCP ports
- SNMP vulnerabilities
  - Guess SNMP community names
  - Discover SNMP vulnerabilities
  - Discover SNMP vulnerabilities of identified SNMP agents
- Discover network resources that are not running Symantec Enterprise Security Manager agents
- Discover network resources that are not running Symantec Intruder Alert agents
- All TCP services
  - Discover all privileged TCP services
  - Discover all non-privileged TCP services
- Discover select TCP services
- Discover select UDP services
- Discover all UDP services
- Obtain banners from TCP services
- Discover network resources that are running Norton AntiVirus Corporate Edition
- Discover network resources that are not running Norton AntiVirus Corporate Edition
- Enumerate resources
  - Identify network resources
  - Enumerate target network resources
  - Use ICMP protocol to scan network resources
  - Analyze resources to determine preliminary vulnerabilities

Granular objectives cannot be run simultaneously with full scans or other granular objectives.

Network Resources tab

Use the Network Resources tab to focus on scan results for particular network resources. For example, if you are concerned about the security of a particular

server, during or after a scan, or after you have reloaded a saved scan file, you can select the Network Resources tab and then select the network resource that you are concerned about. When you do so, the Graph pane and Data Table pane change to reflect only vulnerability information for that network resource. Press Ctrl or Shift to select more than one network resource.

Vulnerabilities tab

Use the Vulnerabilities tab to focus on scan results for particular vulnerabilities. For example, if you want to see all network resources with the FTP root directory is writable vulnerability, you can select the Vulnerabilities tab, then select FTP root directory is writable (assuming that that particular vulnerability has been reported on any network resources that Symantec NetRecon has scanned). When you do so, the Graph pane and Data Table pane change to reflect information about only that vulnerability, including the network resources that are found to have it. Press Ctrl or Shift to select more than one vulnerability.

Graph pane

The Graph pane, in the upper right corner of the Symantec NetRecon main window, displays the number of low-risk, medium-risk, and high-risk records that are discovered as Symantec NetRecon runs. The graph is refreshed as the program runs and discovers new information.

The record count that is displayed by the Graph pane depends on what is selected in the Control pane. See "Control pane" on page 10 for more information.

The Graph pane gives you a brief overview of the scan results.

Data Table pane

The Data Table pane, in the bottom half of the Symantec NetRecon window, shows records that are generated by Symantec NetRecon as it runs. When Symantec NetRecon discovers vulnerabilities or information that could lead to the discovery of vulnerabilities, it stores the information that it finds in records.

Records are pieces of data regarding networks that are scanned by Symantec NetRecon. Each row contains one record. The columns in the table show field values in those records. Records usually have multiple fields.

By default, Symantec NetRecon limits the records that are displayed to those that are specifically related to whatever is selected in the Control pane. (See "Control pane" on page 10 for more information.) You can show all records that are generated during a scan by selecting the All Records command in the View menu.

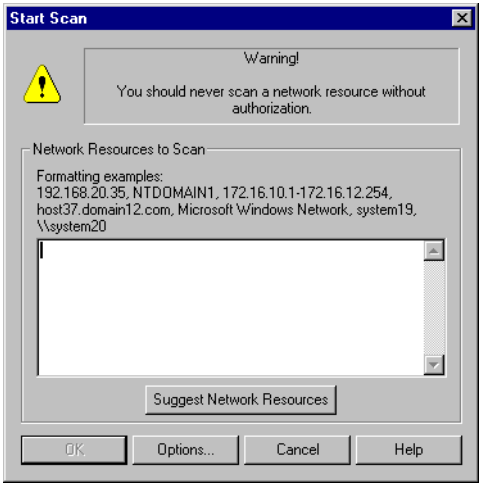
By default, Symantec NetRecon sorts by risk in descending order every 15 seconds during a scan. You can turn off Auto Sort by deselecting Auto Sort in the View menu. To the left of each record is an icon that indicates its risk level.

Performing scans

Before you begin to scan network resources, determine which network resources you want to scan and who can grant permission to scan those resources, then be sure to obtain permission. Scanning network resources without permission is a serious matter that may result in legal action and/or civil litigation.

To perform a scan

1. Select an objective in the Objectives tab of the Control pane.
   The Heavy scan objective contains most of the other scan objectives and is selected by default.
2. Do one of the following:
   - On the taskbar, click **Start Scan**.
   - On the Scan menu, click **Start Scan**.



3. In the Start Scan dialog box, do one of the following:
   - Type the network resources that you want to scan.
   - Drag the icon of a text file containing network addresses from the Windows Explorer into the dialog box to specify network resources.
   - Click **Suggest Network Resources** to have Symantec NetRecon build a list of network resources that you may want to scan.

You can specify IP addresses (including ranges), system names, domain names, a Microsoft Windows Network, a NetWare or Compatible Network or anything else that you can see when you open your Windows Network Neighborhood. When referring to network containers from the Network Neighborhood, type them into the Start Scan dialog box exactly as they appear. Separate multiple entries with a line break or a comma.

Warning: If you click Suggest Network Resources to have Symantec NetRecon search for network resources, be sure to look carefully at the list of network resources that Symantec NetRecon discovers and edit it if necessary before proceeding with a scan. Scanning networks without authorization can result in criminal prosecution and/or civil litigation.

---

4 Click **OK** to begin the scan, after you are satisfied that you have specified only network resources that you want to scan.

Note: Ensure that the selected objective accepts the Network Resource type. For example, "Scan for NAVCE systems," takes only IP addresses or IP ranges.

Using path analysis

Symantec NetRecon provides a way for you to see not only what vulnerabilities it has discovered in your network but also how it discovered the information. Since Symantec NetRecon uses some vulnerabilities to discover others, much as an attacker would when learning about your network and exploiting its weaknesses, it is useful to know the path that led Symantec NetRecon to discover a vulnerability. That way you can learn which vulnerabilities are gateways that can lead to further information gathering and exploits, and you can close those gateways.

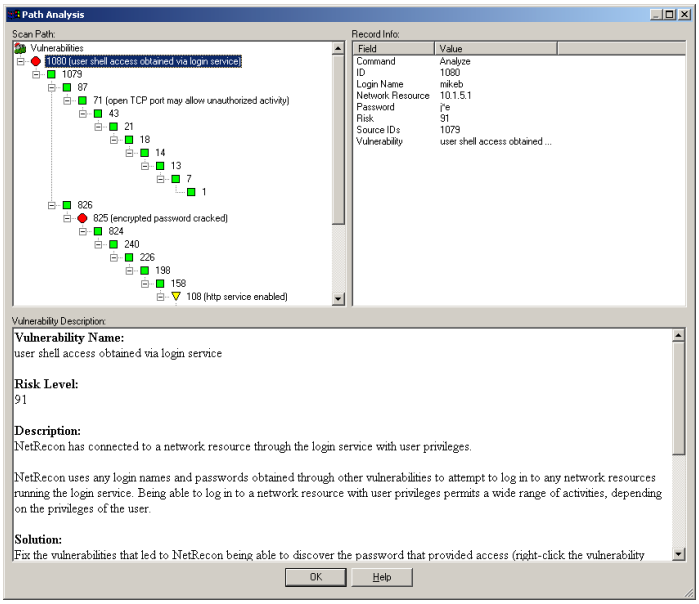
To see the path analysis for a particular vulnerability

1 Start a scan or open a .nrd file that contains scan results.

2 In the Data Table pane, right-click a vulnerability.

3 Click **Path Analysis**.

The path appears in a tree format in the Scan Path pane of the Path Analysis dialog box.



Each item on the tree represents a record, with those closest to the top of the tree being the most recent. Some of these records may contain vulnerability names, but some records are for information gathering and rearranging and, therefore, do not have an associated vulnerability.

4 To see more information about any item on the path, click it.

If it has an associated vulnerability, the description of that vulnerability appears in the Vulnerability Description area of the dialog box.

Note: Some vulnerabilities have multiple sources and, therefore, may show more than one information branch in the Path Analysis dialog box.

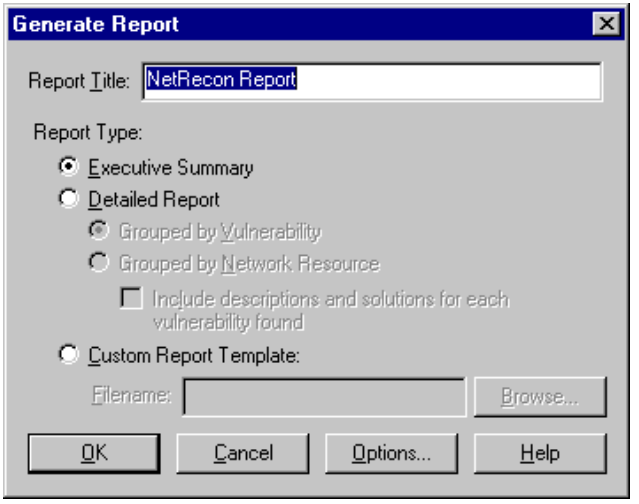
Generating reports

As Symantec NetRecon runs, it gathers information about the networks it scans. The graph in the Graph pane is a visual indicator of the accumulation of scan data. Each piece of data is called a record. The Data Table pane shows records that are related to the objective, network resource, or vulnerability that is selected in the Control pane. At any point during the scan, you may have Symantec

NetRecon generate a report, which is a summary of the information that is gathered to that point.

To create and view a report

1 Select **Report> Generate Report**.



2 In the Generate Report dialog box, next to Report Title, type the name of the report.

3 Under Report Type, do one of the following:

- Click **Executive Summary** to generate reports that include an overview of the network security for the network resources that are scanned by Symantec NetRecon and do not provide any scan details.
- Click **Detailed Report** to generate reports that include enough information to see and verify vulnerabilities and resolve problems.

  The option with the most detail is Grouped by Network Resource, with the Include descriptions and solutions for each vulnerability found check box selected.
- Click **Custom Report Template** to use Crystal Reports to create custom templates or select an existing template.

4 (Optional) To further refine your report output (including only vulnerabilities within a certain risk range), click **Options.**

Select any additional report options.

5 Click **OK** to generate your report and view it in the Crystal Reports report viewer.

6 To save the report in one of the Crystal Reports exportable formats, click the following button:

7 Select an export format.

Generating objective and vulnerability descriptions

Symantec NetRecon lets you generate one report that contains all the objective descriptions and another report that contains all the vulnerability check descriptions. These can be useful for learning how to narrow the focus of scans and for learning the kinds of vulnerabilities that Symantec NetRecon is capable of finding.

You can generate either of these reports from within Symantec NetRecon.

To generate a report that contains all Symantec NetRecon objectives

- Select **Report> View Objective Descriptions**.

To generate a report that contains descriptions all of all vulnerabilities that Symantec NetRecon can discover

- Select **Report> View Vulnerability Descriptions**.

Running progressive scanning

Each Symantec NetRecon objective runs separately and simultaneously. Most objectives receive information from or pass information to other objectives. The interdependency of Symantec NetRecon objectives is their strength. Because they share information with each other, Symantec NetRecon can probe a system much like a user would, using all the information gathered as a lever to gain additional information.

Note: Particularly with progressive scanning, as opposed to other scanning methodologies, the vulnerabilities that are reported during a network scan may vary from scan to scan. That's because some network resources may be offline and, because Symantec NetRecon uses the information that is found by some vulnerabilities to detect others, having a network resource offline might reduce an entire branch of information.

Chapter 2

Installing Symantec NetRecon 3.6

This chapter includes the following topics:

- System requirements
- About installation
- Entering a license key and serial number
- Creating or changing a password
- Scanning in Demo mode

System requirements

Minimum system requirements to run Symantec NetRecon version 3.6 are listed in the following table:

Table 2-1 Minimum system requirements

System variables	Minimum requirements
Operating system	Windows NT 4 (Workstation or Server) with Service Pack 6 or greater, Windows 2000, and Windows XP
Memory	96 MB
Disk space	40 MB
Display	VGA
CPU	Pentium-class or greater

About installation

The Start menu shortcut to the Symantec NetRecon program is installed in the Microsoft Windows NT personal profile that is active when the software is installed. Therefore, before installing Symantec NetRecon, log on to the computer using the account that you plan to use when performing Symantec NetRecon scans.

The account that you plan to use for installing and using Symantec NetRecon should have administrative access to the computer where Symantec NetRecon is being installed.

To install Symantec NetRecon from autorun on CD

1. Insert the Symantec NetRecon CD into your CD-ROM drive.
   The Symantec NetRecon CD has an autorun program that should start when your computer reads the CD.
2. In the Welcome screen, click **Next**.
3. In the Symantec License Agreement screen, click **Yes**.
4. In the Choose Destination Location screen, do one of the following:
   - Accept the default location where setup installs Symantec NetRecon.
   - Browse to a different location where setup installs Symantec NetRecon.

5 In the Select Program Folder screen, do one of the following:
   - Select a folder from the list where setup installs program icons.
   - Type a new folder name where setup installs program icons.

6 Click **Next**.

To install Symantec NetRecon from CD

1 Insert the Symantec NetRecon CD into your CD-ROM drive.

2 On the Windows taskbar, click **Start** > **Run**.

3 In the Run prompt, type **D:\setup.exe**.
   If your CD-ROM has a drive letter other than D, replace D with that drive letter.

4 Click **OK**.

5 Click **Install**.

6 In the Welcome screen, click **Next**.

7 In the Symantec License Agreement screen, click **Yes**.

8 In the Choose Destination Location screen, do one of the following:
   - Accept the default location where setup installs Symantec NetRecon.
   - Browse to a different location where setup installs Symantec NetRecon.

9 In the Select Program Folder screen, do one of the following:
   - Select a folder from the list where setup installs program icons.
   - Type a new folder name where setup installs program icons.

10 Click **Next**.

Integrating with Symantec Enterprise Security Manager (ESM)

The Symantec NetRecon integration has been updated to integrate with Symantec ESM version 5.5 as part of the installation.

If Symantec ESM is installed, Symantec NetRecon automatically prompts the user to reregister with Symantec ESM. Additionally, a shortcut (the ESM Registration Tool) is installed in the Symantec NetRecon directory in the start menu: Start>Programs>Symantec>NetRecon 3.6.

If Symantec ESM is installed, but not registered with Symantec NetRecon, only the shortcut is installed in the Symantec NetRecon directory.

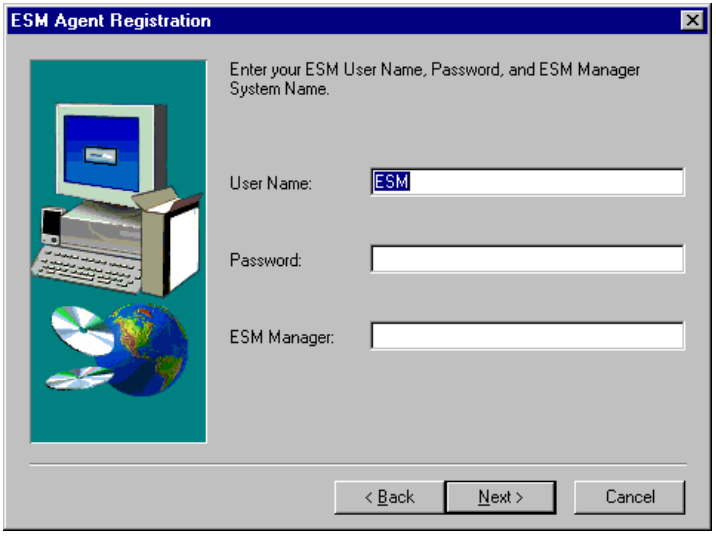
The new Symantec ESM Registration Tool launches esmregister.exe, allowing the user to register Symantec NetRecon with Symantec ESM at any time. The Symantec ESM Registration Tool also repairs broken Symantec ESM registrations to Symantec ESM version 5.5. Symantec NetRecon 3.6 is registered with Symantec ESM files, when the Symantec ESM files are updated to SU13.

If a Symantec ESM agent is not installed, the Symantec NetRecon integration will not be prompted for.

Symantec NetRecon data files (.nrd files) can be loaded into Symantec ESM if you have installed the Integration module. The Symantec NetRecon installation program determines whether a Symantec ESM agent is installed on your computer. If it finds a Symantec ESM agent, it asks whether you want to install the Symantec ESM/NetRecon integration software.

To install the Symantec ESM/NetRecon integration software

1. In the message box that prompts you to install the integration software, click **Yes**.



2. In the ESM Agent Registration dialog box, do the following:
   - Type the ESM User Name for the Symantec ESM manager to which the agent is registered (or one of them, if it is registered to multiple managers).
   - Specify a password for the manager user.

- Type the ESM Manager name. The name of the ESM manager is typically the name of the computer where the manager is installed.

Note: You are registering the Integration module to an ESM manager, which may be on a different computer from the Symantec ESM agent where Symantec NetRecon is being installed.

3 Click **Next**.

4 After the Symantec NetRecon installation adds the appropriate files and registers the Integration module with the specified Symantec ESM manager, click **Finish**.

If the Symantec NetRecon agent is not registered to the manager that you specify in step 2, an error message prompts you to register the agent with the appropriate manager.

For more information about using the Symantec ESM Symantec NetRecon Integration module, see Chapter 3, "Configuring NetRecon to run with ESM" on page 29.

Uninstalling Symantec NetRecon

Symantec NetRecon's uninstall capability has been enhanced. The uninstall in version 3.5 did not clean files that were added with security updates. Uninstall in version 3.6 now recognizes and removes files that are added to Symantec NetRecon through security updates after the initial installation of Symantec NetRecon version 3.6.

Entering a license key and serial number

Before you can perform live Symantec NetRecon scans of actual network resources, you must enter a license key and serial number in Symantec NetRecon.

If you do not have a license key and serial number, contact the service and support department. If you do not enter a license key and serial number, Symantec NetRecon runs only in Demo mode.

Running Symantec NetRecon

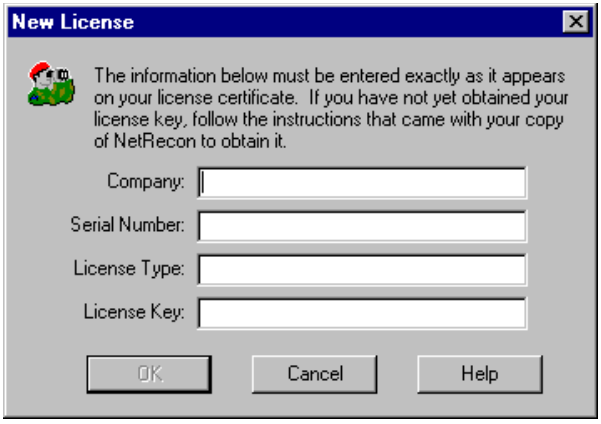
Without a license key and serial number, Symantec NetRecon runs only in Demo mode.

To run Symantec NetRecon in Demo mode

- At the prompt asking if you would like to enter your license key, click **No**. You can run the program in Demo mode (see "Scanning in Demo mode" on page 27).

To run NetRecon with a license key

1. At the prompt asking if you would like to enter your license key, click **Yes**.


New License
The information below must be entered exactly as it appears on your license certificate. If you have not yet obtained your license key, follow the instructions that came with your copy of NetRecon to obtain it.
Company:
Serial Number:
License Type:
License Key:
OK
Cancel
Help

2. In the New License dialog box, type the following new license information:
   - Company name
   - Serial number
   - License type
   - License key
3. Click **OK**.

Changing a license key

If you have previously entered a license key and serial number but now have a new license (for example, if you previously had an Evaluation license but have since purchased an Unlimited license), you can change the existing license information.

To change existing license information

1. Open NetRecon.
2. Click **Administration** > **View/Change License Key**.

3 In the New License dialog box, type the following new license information:
   - Company name
   - Serial number
   - License type
   - License key
4 Click **OK**.

Creating or changing a password

Creating a new password

Immediately after entering license information the first time the program runs, you must specify a password. The password ensures that only authorized personnel can perform Symantec NetRecon scans. You are prompted to enter the password twice to protect against making typographical errors.

Changing an existing password

You can change an existing password at any time.

To change a password

1 Click **Administration** > **Change Password**.
2 In the Change Password dialog box, type the old password.
3 Type the new password.
4 Click **OK**.

Scanning in Demo mode

You can run Symantec NetRecon in Demo mode without entering a license key and serial number. Running a scan while in Demo mode causes Symantec NetRecon to produce simulated scan data. You can use this simulated data to learn how Symantec NetRecon's features work. For example, you can manipulate the data in the Data Table pane or create and view reports. You cannot scan any real networks or network resources while Symantec NetRecon is running in Demo mode.

Chapter 3

Configuring NetRecon to run with ESM

This chapter includes the following topics:

- Installing the Integration module
- Using the Integration module

Installing the Integration module

The Symantec ESM NetRecon Integration module lets you import Symantec NetRecon (.nrd) data files into Symantec ESM, allowing you to use Symantec ESM's reporting features, trend analysis features, and so on to assess the results of Symantec NetRecon scans.

The Symantec ESM NetRecon Integration module can be installed during a Symantec NetRecon installation if the installation program finds a Symantec ESM agent on that computer.

For more information about installing the module and registering it to a Symantec ESM manager, see Chapter 2, "Installing Symantec NetRecon 3.6" on page 21.

Using the Integration module

You can use the Integration module by running its associated policy, called NetRecon, from the Symantec ESM Enterprise Console. First, however, you should configure the policy to specify which Symantec NetRecon data file to open, which details to import, and so on.

Configuring the Symantec NetRecon policy

To configure the Symantec NetRecon policy

1. Open the Symantec ESM Enterprise Console.

   This may not be on the same computer as the Symantec ESM agent computer where Symantec NetRecon is installed.

2. In the Enterprise tree, open the manager.

3. Under the manager, click **Policies**.

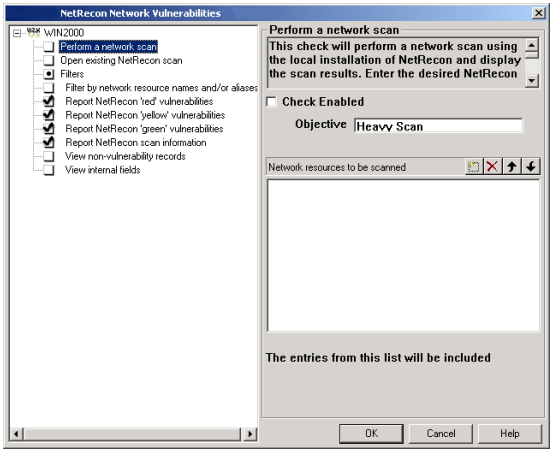
4. Click **NetRecon**.

   If the NetRecon policy does not appear here, you need to reinstall Symantec NetRecon on a computer with a Symantec ESM agent and/or run the Symantec ESM Registration Tool. Follow the instructions in Chapter 2 for adding the Symantec ESM Integration module and registering it to an ESM manager.

5. Click **Network Vulnerabilities**.

6. Click **Windows NT/2000/XP**.

7. Select a Symantec NetRecon Network Vulnerability title in the Symantec ESM Enterprise tree at the point where you want to configure the NetRecon policy.


NetRecon Network Vulnerabilities
WIN2000
Perform a network scan
Open existing NetRecon scan
Filters
Filter by network resource names and/or aliases
Report NetRecon 'red' vulnerabilities
Report NetRecon 'yellow' vulnerabilities
Report NetRecon 'green' vulnerabilities
Report NetRecon scan information
View non-vulnerability records
View internal fields
Perform a network scan
This check will perform a network scan using the local installation of NetRecon and display the scan results. Enter the desired NetRecon
Check Enabled
Objective
Heavy Scan
Network resources to be scanned
The entries from this list will be included
OK
Cancel
Help

8 Change check settings, as described in the following table:

To	Do This
Perform a network scan	Double-click the **Perform a network scan** option and specify the type of objective you want to run. In the Network resources to be scanned dialog box, type the names or IP addresses of the computers you want to scan. Click **OK**.
Choose which Symantec NetRecon data file (.nrd) to open	Double-click the **Open Existing NetRecon Scan** option and specify a file name and path (this is the path on the agent system). Click **OK**.
Specify system names and aliases to include (importing only data for specified systems) or exclude (import data for everything except specified systems)	Double-click **Filter by network resource names and/or aliases**, type the names of network resources or aliases, select **Include** or **Exclude**. Click **OK**.
Import High vulnerabilities	Check **Report NetRecon 'red' vulnerabilities**
Import Medium vulnerabilities	Check **Report NetRecon 'yellow' vulnerabilities**
Import Low vulnerabilities	Check **Report NetRecon 'green' vulnerabilities**
Import the network resources that were scanned	Check **Report NetRecon scan information**
Import all data records, not just those that include vulnerabilities	Check **View all records**
Import Symantec NetRecon-specific data (such as the record ID, source ID, NetRecon module command, etc.) into the Information field	Check **View internal fields**

Running the Symantec NetRecon policy

You must configure the Symantec NetRecon policy before you can successfully run it. See "Configuring the Symantec NetRecon policy" on page 30.

To run the NetRecon policy

1. Open the Symantec ESM Enterprise Console.

   This may not be on the same computer as the Symantec ESM agent where Symantec NetRecon is installed.

2. On the taskbar, to start the Run Wizard policy, click the following button:

3. Select a manager (the manager that you selected when you installed the Integration module).

4. Click **Next**.

5. Select the Symantec NetRecon policy.

6. Click **Next**.

   If the Symantec NetRecon policy does not appear here, you need to reinstall Symantec NetRecon on a computer with a Symantec ESM agent and follow the instructions in Chapter 2 for adding the ESM Integration module and registering it to an ESM manager.

7. Click **Next**.

   The Network Vulnerabilities module–the only one available with this policy–is already selected.

8. Select the domain where you want this policy to run. This will limit the agents from which you can choose.

9. Click **Next**.

10. Select an agent.

    This must be an agent that is installed on a computer where Symantec NetRecon is installed.

11. Click **Next**.

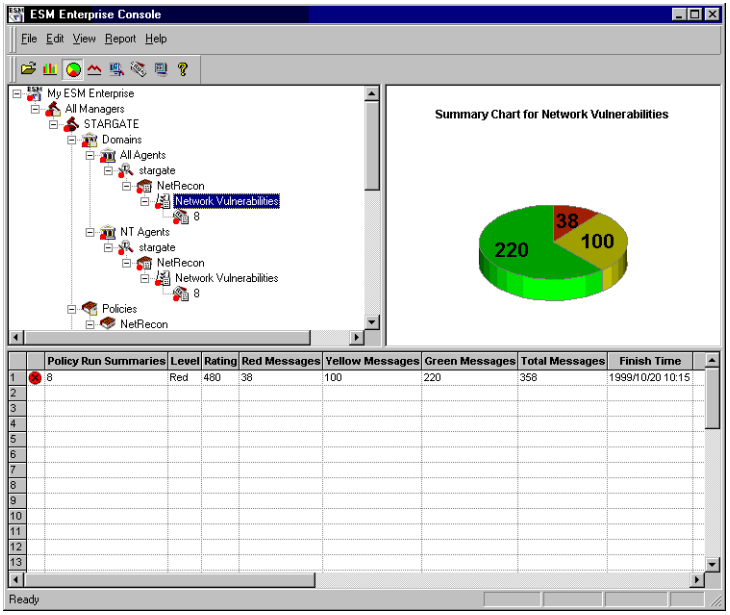
12. Do one of the following:

    - Click **Finish** to run the policy immediately.
    - Click **Schedule** to select a date and time for the policy to run.

Viewing a Summary Graph

After the policy runs, Symantec NetRecon data is imported into Symantec ESM. Figure 3-1 shows the Symantec ESM console as it appears, in Summary Mode, after selecting the Network Vulnerabilities policy under the agent where Symantec NetRecon is installed. The number of high, medium, and low security risks are summarized in the graph.

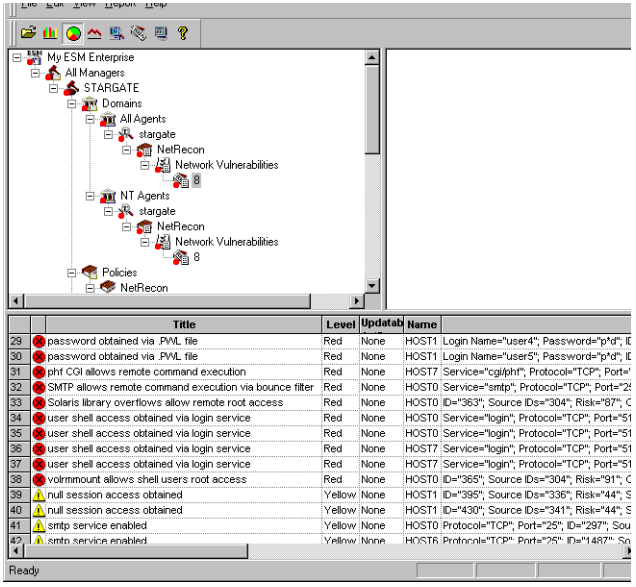
Figure 3-1 Network Vulnerabilities policy run summary



Viewing Policy Run Data

By selecting a policy run under the agent in the Enterprise tree (not under Policy Runs), you can see the details of a particular run, which in this case consists of all the imported Symantec NetRecon records. Figure 3-2 shows the results of a policy run.

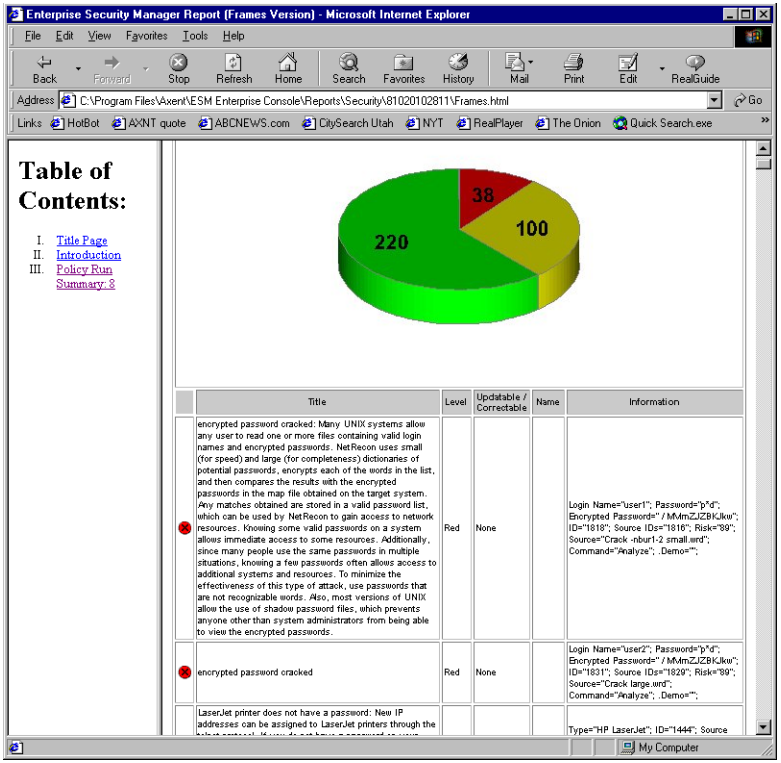
Figure 3-2 A List of Symantec NetRecon vulnerabilities


My ESM Enterprise
All Managers
STARGATE
Domains
All Agents
stargate
NetRecon
Network Vulnerabilities
8
NT Agents
stargate
NetRecon
Network Vulnerabilities
8
Policies
NetRecon
Title
Level
Updatab
Name
29 password obtained via .PWL file Red None HOST1 Login Name="user4"; Password="p*d"; I
30 password obtained via .PWL file Red None HOST1 Login Name="user5"; Password="p*d"; I
31 phf CGI allows remote command execution Red None HOST7 Service="cgi/phf"; Protocol="TCP"; Port=
32 SMTP allows remote command execution via bounce filter Red None HOST0 Service="smtp"; Protocol="TCP"; Port="2
33 Solaris library overflows allow remote root access Red None HOST0 ID="363"; Source IDs="304"; Risk="87"; C
34 user shell access obtained via login service Red None HOST0 Service="login"; Protocol="TCP"; Port="51
35 user shell access obtained via login service Red None HOST0 Service="login"; Protocol="TCP"; Port="51
36 user shell access obtained via login service Red None HOST7 Service="login"; Protocol="TCP"; Port="51
37 user shell access obtained via login service Red None HOST7 Service="login"; Protocol="TCP"; Port="51
38 volrmmount allows shell users root access Red None HOST0 ID="365"; Source IDs="304"; Risk="91"; C
39 null session access obtained Yellow None HOST1 ID="395"; Source IDs="336"; Risk="44"; S
40 null session access obtained Yellow None HOST1 ID="430"; Source IDs="341"; Risk="44"; S
41 smtp service enabled Yellow None HOST0 Protocol="TCP"; Port="25"; ID="297"; Sou
42 smtp service enabled Yellow None HOST6 Protocol="TCP"; Port="25"; ID="1487"; So
Ready

Generating a Report

You can generate an HTML report using the Symantec NetRecon data by right-clicking a policy run and selecting **Security Report**. In the Report Options dialog box, select the report options that you want (see the *Symantec ESM User Manual* for more information about report options).

Figure 3-3 A Symantec ESM report based on Symantec NetRecon data


Enterprise Security Manager Report (Frames Version) - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit RealGuide
Address C:\Program Files\Axent\ESM Enterprise Console\Reports\Security\81020102811\Frames.html
Go
Links HotBot AXNT quote ABCNEWS.com CitySearch Utah NYT RealPlayer The Onion Quick Search.exe
Table of Contents:
I. Title Page
II. Introduction
III. Policy Run Summary: 8
38
100
220
Title
Level
Updatable / Correctable
Name
Information
encrypted password cracked: Many UNIX systems allow any user to read one or more files containing valid login names and encrypted passwords. NetRecon uses small (for speed) and large (for completeness) dictionaries of potential passwords, encrypts each of the words in the list, and then compares the results with the encrypted passwords in the map file obtained on the target system. Any matches obtained are stored in a valid password list, which can be used by NetRecon to gain access to network resources. Knowing some valid passwords on a system allows immediate access to some resources. Additionally, since many people use the same passwords in multiple situations, knowing a few passwords often allows access to additional systems and resources. To minimize the effectiveness of this type of attack, use passwords that are not recognizable words. Also, most versions of UNIX allow the use of shadow password files, which prevents anyone other than system administrators from being able to view the encrypted passwords.
Red
None
Login Name="user1"; Password="p"d"; Encrypted Password=" / MvmZJZBKJkw"; ID="1818"; Source IDs="1816"; Risk="89"; Source="Crack -nbur1-2 small.wrd"; Command="Analyze"; .Demo="";
encrypted password cracked
Red
None
Login Name="user2"; Password="p"d"; Encrypted Password=" / MvmZJZBKJkw"; ID="1831"; Source IDs="1820"; Risk="89"; Source="Crack large.wrd"; Command="Analyze"; .Demo="";
LaserJet printer does not have a password: New IP addresses can be assigned to LaserJet printers through the
Type="HP LaserJet"; ID="1444"; Source
My Computer

The Table of Contents frame in the left pane lets you navigate through the report.

Chapter 4

Using the Command Line Interface

This chapter includes the following topics:

- Advantages of the CLI
- Syntax of the CLI
- Understanding .nrd files
- HTML reports

Advantages of the CLI

The Symantec NetRecon Command Line Interface (CLI) allows scans to be run or spawned from other programs. The CLI provides important functionality in a number of different contexts.

The following examples illustrate possible uses for the CLI:

- Integrates Symantec NetRecon into Symantec Enterprise Security Manager (ESM) using the ICE module.
- Facilitates integration into management frameworks, such as Tivoli Enterprise, HP OpenView, CA Unicenter, and BMC PATROL.
- Schedules regular scans via the NT/W2K at command.
- Provides a way for service providers to launch Symantec NetRecon scans automatically after collecting customer scan requests on a Web site.

Syntax of the CLI

The specification for the Symantec NetRecon command line is as follows:

NetRecon [**infile**] [**outfile**] [-**hide**] [**minimize**] [-**kill**] [-**registry** <**registrykey**>]

The Symantec NetRecon command also runs without any parameters. The order of all hyphenated (-) parameters is irrelevant, but the first non-hyphenated parameter is interpreted as the infile and the second is interpreted as the outfile.

infile	This parameter indicates the input file (path and file name) from which Symantec NetRecon draws the .nrd file that contains information from a previous scan and/or directives for the current scan.
outfile	This parameter indicates the output file (path and file name) into which Symantec NetRecon saves the results of a scan.
-hide	This option instructs Symantec NetRecon to hide the GUI during the scan. This option may be abbreviated as -**h**.
-minimize	This option instructs Symantec NetRecon to minimize the GUI during the scan. This option may be abbreviated as -**m**.
-kill	This directive instructs Symantec NetRecon to end a scan that is currently running. The results of the scan to the point of the kill command are saved in the file that is specified by the outfile parameter. If there is no scan running, Symantec NetRecon exits normally. This option may be abbreviated as -**k**.
-registry <registrykey>	This directive specifies the registry key that contains the path, license, and other information that is necessary for the scan. The default value (if the option is not specified) is "-registry netrecon." This translates to the following Registry key: HKEY_LOCAL_MACHINE\SOFTWARE\Symantec\netrecon. The registry specification option may be abbreviated as -**r** <**registrykey**>.

Sample commands with results

The following table lists sample CLI commands with descriptions of their results:

Table 4-1 Sample CLI commands and results

NetRecon	Starts Symantec NetRecon with a normal GUI interface but does not initiate a scan.
NetRecon -h	Exits with non-zero code and logs an error in error.log
NetRecon infile.nrd	Starts Symantec NetRecon with a normal GUI, loads the information from infile.nrd, but does not automatically begin a scan. An outfile must be specified before the scan can run.
NetRecon infile.nrd -h	Exits with non-zero code and logs an error in error.log.
NetRecon infile.nrd outfile.nrd -m	Starts Symantec NetRecon with a minimized GUI and loads instructions from infile.nrd. If the instructions from infile.nrd are sufficient, the scan runs and the output is sent to outfile.nrd.
NetRecon -k	Terminates any running scans and saves any recorded information to the specified outfile. If there are no Symantec NetRecon scans currently running, the program exits.
NetRecon infile.nrd outfile.nrd -h -r webrecon	Starts Symantec NetRecon with a hidden GUI and loads instructions from infile.nrd. The registry information is drawn from the following source: HKEY_LOCAL_MACHINE\ SOFTWARE\SYMANTEC\webrecon The default setting, if no registry key is specified with the -r option, is: HKEY_LOCAL_MACHINE\SOFTWARE\SYMANTEC\netrecon

Understanding .nrd files

Symantec NetRecon data (.nrd) files contain the actual data that are gathered during a scan as well as some basic instructions for running the scan.

These basic instructions are:

- Which computers to scan
- What kind of a scan to run
- How long the scan should run

This information is usually specified through the GUI. If you are using the CLI, however, it is important to understand that this information is stored as a series of comment lines containing keywords in a .nrd file.

The relevant keywords that Symantec NetRecon recognizes in a comment line are ScanWhat, Objective, and Duration. The syntax and meaning of each is summarized below.

Note: While comment lines may be interspersed with the data in a .nrd file, Symantec NetRecon interprets keyword comment lines correctly only when they appear before the first data record.

ScanWhat

The ScanWhat keyword tells Symantec NetRecon which network resources to scan. This instruction may consist of a host name, an IP address, or a range of IP addresses.

The following sample comment lines show the syntax of ScanWhat:

 # ScanWhat = mugwump

#ScanWhat = 10.12.14.1 - 10.12.14.254

#scanwhat=10.12.14.16

Spaces between elements are irrelevant and the keyword itself is not case sensitive. There is no default setting for the ScanWhat comment line. If there is no ScanWhat comment line in the infile.nrd that is specified by a Symantec NetRecon command, the scan does not run.

Objective

The Objective keyword indicates what type of a scan to run. There are three available kinds of scans, Heavy Scan, Medium Scan, and Light Scan.
See "Configuring NetRecon to run with ESM" on page 29. for more information on each of these scans.

The following sample comment lines show the syntax of an Objective comment line:

 # objective = medium scan

#Objective=LightScan

 # objective = Heavy Scan

Note case insensitivity and the irrelevance of spaces between elements. If no Objective is specified in a .nrd file, the default setting is specified in the modules.inf file. Heavy Scan is the default.

Duration

The Duration keyword tells Symantec NetRecon how long a scan should run. There are two options for specifying how long a scan should run. The first option is to tell the scan to run Until Complete. This may be abbreviated as the letter "u." The second option is to tell Symantec NetRecon exactly how long to run the following syntax: `D HH:MM:SS`. D is days, HH is hours, MM is minutes, and SS is seconds. The following sample comment lines all indicate a duration of five minutes.

 # Duration = 0 0:5:0

 # Duration = 0:5:0

 # Duration = 5:0

 # Duration = 300

Note that leading zeros may be omitted and that, while spaces are not usually relevant, a space is required to separate a days value from the other values.

The default value for Duration, when no time frame is specified, is Until Complete. The following comment lines could also be used to specify Until Complete.

 # Duration = until complete

#Duration=u

The first letter (u) is the only necessary parameter. Spaces between elements are irrelevant.

Report keywords

Symantec NetRecon generates HTML reports using keywords that are contained in the .nrd files. These parameters specify what information is contained in a report, the type of report, and the output location of the report.

GenerateReport

GenerateReport is the keyword that prompts Symantec NetRecon to generate the reports. When GenerateReport is set to true, Symantec NetRecon looks for further keywords that indicate information to include in the report. The word true is not case sensitive.

GenerateReport = True

Report.CrystalTemplateFile

This keyword indicates the path and file name of the Crystal Reports template that is used to format the report. Four Crystal Reports templates are available:

- Executive Summary.rpt
- By Vulnerability.rpt
- By Machine.rpt
- By Machine No Details.rpt

These templates correspond to the types of reports that you can generate from the Symantec NetRecon graphical user interface.

Executive Summary.rpt is a report with few details that is designed to give an overview of vulnerabilities. By Vulnerability.rpt is more detailed and is grouped by vulnerabilities. By Machine No Details.rpt is similar to By Vulnerability.rpt, but this report is grouped by Network resource. By Machine.rpt is the same as By Machine No Details.rpt, except that it contains more detail regarding vulnerability descriptions and solutions.

 # Report.CrystalTemplateFile = C:\NetRecon Folder\By Machine.rpt

Report.ReportOutputFile

This keyword indicates the path and file name where Symantec NetRecon writes the report. The report is generated in HTML format. The value for this keyword must be expressed as an absolute path name, as shown in the following example:

 # Report.ReportOutputFile = C:\Folder\Folder1\FileName.html

Report.ShowTitle

This keyword indicates whether Symantec NetRecon puts a title at the beginning of the report.

 # Report.ShowTitle = True

Report.Title

This keyword indicates the title that Symantec NetRecon puts on the report when Report.ShowTitle is set to true.

 # Report.Title = NetRecon Report Name

Report.FilterResources

This keyword tells Symantec NetRecon whether to filter report information by specific computers. To filter information by computers, set this keyword to true.

 # Report.FilterResources = True

Note: If Report.FilterResources is set to true and no Report.Resource keywords are present, the report is blank.

Report.Resource

When Report.FilterResources is set to true, use this keyword to specify the computers that go in the report. Use this keyword multiple times to specify multiple computers. Use fully qualified domain names.

 # Report.Resource = machinename.host.domain.com

Note: To get a fully qualified domain name for a computer, ping it using its IP address and the –a option.

Report.FilterVulnerabilities

This keyword indicates the vulnerabilities that Symantec NetRecon includes in the report. When set to True, Symantec NetRecon filters the report vulnerabilities that are included in the report using the Report.Vulnerability keyword. When Report.FilterVulnerabilities is set to False, Symantec NetRecon reports all available information.

 # Report.FilterVulnerabilities = True

 # Report.FilterVulnerabilities = False

Report.Vulnerability

This keyword specifies individual vulnerabilities to be included in the report when Report.FilterVulnerabilities is set to True. Use this keyword to specify single vulnerability names. Use this keyword multiple times to specify multiple vulnerabilities.

 # Report.Vulnerability = IP name obtained

 # Report.Vulnerability = FTP access obtained

Note: If Report.FilterVulnerabilities is set to True and no Report.Vulnerability keywords are present, the report is blank. Also, capitalization for keyword values must exactly match the capitalization in the Symantec NetRecon vulnerability descriptions.

Report.FilterRisks

This keyword indicates whether Symantec NetRecon filters recognized vulnerabilities by risk level. To filter vulnerabilities that are contained in the reports by risk level, set this keyword to True.

 # Report.FilterRisks = True

Note: If you set this keyword to true, but do not use the necessary keywords to specify what filters to use, your report contains all available information.

Report.SortRiskBy

This keyword indicates whether Symantec NetRecon filters vulnerabilities by risk according to custom filters or preset filters. When you set this keyword to Custom, use the Report.FilterBelow and the Report.FilterAbove keywords to

customize your settings. When you set this keyword to Preset, use the Report.FilterHighs, Report.FilterMediums, and Report.FilterLows keywords to select the preset filter.

 # Report.SortRiskBy = Custom

 # Report.SortRiskBy = Preset

Note: When you set the Report.FilterRisks keyword to True, you must use this keyword.

Report.FilterBelow and Report.FilterAbove

These keywords indicate your custom settings for filtering vulnerabilities by risk level. Use these keywords when you set the Report.SortRiskLevel to Custom.

Symantec NetRecon uses number values to indicate the risk level of vulnerabilities. These number values have a range of 0 to 100. Report.FilterBelow indicates the upper limit of the number value that you want to use in your reports while Report.FilterAbove indicates the lower value.

For example, if you want to include all vulnerabilities in your report that have values falling between the number values of 0 and 55, you would set the Report.FilterBelow keyword to 56 and the Report.FilterAbove keyword to –1.**# Report.FilterBelow = 56**

 # Report.FilterAbove = -1

If you want to include all vulnerabilities in your report that have values falling between 45 and 100, you would set the Report.FilterBelow keyword to 44 and the Report.FilterAbove keyword to 101.

Note: These keywords are necessary when Report.SortRiskLevel is set to custom or your report is blank.

Report.FilterHighs, Report.FilterMediums, Report.FilterLows

These keywords indicate preset vulnerability level filters. To include vulnerabilities that Symantec NetRecon classifies as high, set Report.FilterHighs to True. Do the same for the other keywords to get medium and low preset filters.

 # Report.FilterHighs = True

 # Report.FilterMediums = True

 # Report.FilterLows = True

Note: This keyword is necessary when Report.SortRiskLevel is set to Preset or your report is blank.

HTML reports

Symantec NetRecon has several new options in the CLI that lets users create reports in HTML format. These options let you select the format of the report and determine the report's content. Selectable options include vulnerability, computer name, vulnerability risk by number, vulnerability risk by color, and other parameters.

Note: When Symantec NetRecon is run without the GUI, error messages that would normally be presented in message boxes are logged to a file called errors.log. This file is stored in the directory that is specified by the path string in the registry key. Serious errors terminate the scan and generate an exit code other than zero.

Symantec NetRecon™ v _____

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